a) determining the DNA sequence for a gene encoding a cancer-related p53 protein from genomic DNA or cDNA derived from a human neoplastic tissue or body fluid; [from the presence, nature and] location of any such mutation or mutations the influence thereof on the biological function of the corresponding protein and thereby on the properties of the neoplasia],]

b) analyzing the DNA sequence determined for the presence of mutations; and

c) [b)] classifying the neoplasia into different subgroups depending on

(i) the presence or [not] absence of a mutation, and

(ii) whether the patient is node positive or not, [and on the basis thereof]; and

d) using the results of step c) for prognosticating the development of the neoplasia and [provide] providing [a] guidance for [adequate] the treatment of the patient.

2. (Amended) The method of claim 1, [characterized in that said properties of the neoplasia includes] wherein a mutation is typed as a missense or nonsense mutation, a deletion, or an insertion [biological aggressiveness and/or metastatic potential].

3. (Amended) The method of claim 2 wherein the presence, position and type of a mutation found is used to categorize the biological aggressiveness and/or metastatic potential of the neoplasia [1 or 2, characterized by analyzing a part or parts of the gene which encode at least one biologically functional domain of the cancer-related protein].

4. (Amended) The method of claim 1 [3, characterized in that] wherein a part or parts or the sequenced gene encode [said biologically functional domain [includes] a DNA binding domain [and/or transactivation site].

5. (Amended) The method of claim 1 [3, [characterized in that] wherein evolutionary conserved regions of the gene are analyzed.

6. (Amended) The method of claim 1, [characterized in that] wherein the neoplasia is a breast, lung, prostate, gastric, colorectal, melanoma or leukemia neoplasia.

7. (Amended) The method of claim 6, [characterized in that] wherein said sample originates from a breast neoplasia.

8. (Amended) The method of claim 7, [characterized in that] wherein the detection of the presence of a p53 mutation in a node negative patient tumour sample is indicative of the need of adjuvant therapy following surgical removal of the tumour.

9. (Amended) The method of claim 8, [characterized in that] wherein the adjuvant therapy is radiation or chemotherapy/hormonetherapy.

10. (Amended) The method claim 1, [characterized in that it comprises] comprising one or more of the following steps:

a) [preparation of] preparing genomic DNA or cDNA,

b) [amplification of] amplifying at least part of the cancer-related gene,

c) processing [of] the cancer-related gene [including] with sequencing reactions, and

d) [detection of] detecting the products from the sequencing reactions in an automated nucleic acid sequencer, computer software optionally being used to (i) track samples and control process steps and/or (ii) to aid in and/or interpret sequence data obtained.

11. (Amended) A method of detecting mutations in a gene, [characterized by] comprising [the steps of]

a) preparing genomic DNA or cDNA,

b) amplifying at least part of the gene,

c) processing the amplified DNA to produce sequencing reaction products [, preferably by solid phase based techniques],

d) detecting the sequencing reaction products in an automated nucleic acid sequencer to determine a DNA sequence or sequences of the p53 gene, and

e) comparing the sequence or sequences with the corresponding wild type p53 gene sequence or sequences, computer software being used to (i) track samples and control process steps and/or (ii) to [at least] aid in interpreting sequence data obtained.

Please add the following new claim:

--13. The method of claim 11, wherein said sequencing reaction products are produced with solid phase techniques.--

REMARKS

Objections to the claims

Claim 10 has been objected to for reciting "The method of any of..." but only depending from claim 1. Applicants respectfully note that claim 10 was amended by Preliminary Amendment on January 15, 1997, to change, "any one of claims 1 to 9" to --claim 1--. As such, claim 10 is believed to be in proper format.